

LABORATORY REPORT

Prepared For: Brown & Caldwell
201 E. Washington St., Ste. 500
Phoenix, AZ 85004
Attention: Barbara Sylvester

Project: Florence Copper 140753

Sampled: 09/08/11
Received: 09/08/11
Revised: 10/03/11 09:48

NELAP #01109CA Arizona DHS#AZ0728

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

LABORATORY ID

PUI0450-01
PUI0450-02
PUI0450-03
PUI0450-04
PUI0450-05
PUI0450-06
PUI0450-07
PUI0450-08
PUI0450-09

CLIENT ID

M21-UBF
M19-LBF
M19.2
M2-GU
M4-O
M1-GL
M18-GU
M25-UBF
P49-O

MATRIX

Water
Water
Water
Water
Water
Water
Water
Water
Water

TestAmerica Phoenix

Tina Paulauskas
Project Manager

Brown & Caldwell
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SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: Not all holding times were met. Results were qualified where the sample analysis did not occur within method specified holding time requirements.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.
N1-Sample filtration for dissolved analytes was performed by laboratory. The regulatory requirement is filtration within fifteen minutes of sampling.
N1a-Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

ADDITIONAL INFORMATION: Report revised to report Magnesium results to the MDL and to correct qualification of Dissolved Magnesium analysis.

Reviewed By:



TestAmerica Phoenix

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Project Manager

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DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: PUI0450-01 (M21-UBF - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	22	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-02 (M19-LBF - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	12	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-03 (M19.2 - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	22	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-04 (M2-GU - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	25	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-05 (M4-O - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	4.0	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-06 (M1-GL - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	20	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-07 (M18-GU - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	21	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-08 (M25-UBF - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	38	1	9/9/2011	9/12/2011	N1
Sample ID: PUI0450-09 (P49-O - Water)					Sampled: 09/08/11				
Reporting Units: mg/l									
Magnesium	EPA 200.7	1110308	2.0	0.20	3.4	1	9/9/2011	9/12/2011	N1

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INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: PUI0450-01 (M21-UBF - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.86	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	10.0	172	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	830	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-02 (M19-LBF - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.42	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	2.00	59.3	1	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	470	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-03 (M19.2 - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.85	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	20.0	167	10	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	820	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-04 (M2-GU - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.83	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	10.0	205	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	880	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-05 (M4-O - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	2.6	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	2.00	60.2	1	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	410	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-06 (M1-GL - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.72	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	10.0	119	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	660	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-07 (M18-GU - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	1110379	0.40	0.89	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	1110379	10.0	183	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	1110300	20	820	1	9/10/2011	9/10/2011	

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Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: PUI0450-08 (M25-UBF - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	11I0379	0.40	0.60	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	11I0379	10.0	279	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	11I0300	20	1400	1	9/10/2011	9/10/2011	
Sample ID: PUI0450-09 (P49-O - Water)				Sampled: 09/08/11				
Reporting Units: mg/l								
Fluoride	EPA 300.0	11I0380	0.40	0.99	1	9/12/2011	9/13/2011	
Sulfate	EPA 300.0	11I0380	10.0	113	5	9/12/2011	9/13/2011	
Total Dissolved Solids	SM 2540C	11I0300	20	460	1	9/10/2011	9/10/2011	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 1110308 Extracted: 09/09/11</u>										
Blank Analyzed: 09/12/2011 (1110308-BLK1)										
Magnesium	ND	2.0	mg/l							
Blank Analyzed: 09/12/2011 (1110308-BLK2)										
Magnesium	ND	2.0	mg/l							
LCS Analyzed: 09/12/2011 (1110308-BS1)										
Magnesium	20.0	2.0	mg/l	21.0		95	85-115			
LCS Dup Analyzed: 09/12/2011 (1110308-BSD1)										
Magnesium	19.8	2.0	mg/l	21.0		94	85-115	0.9	20	
Matrix Spike Analyzed: 09/12/2011 (1110308-MS1)										
Magnesium	199	2.0	mg/l	21.0	Source: PUI0452-02 183	76	70-130			
Matrix Spike Analyzed: 09/12/2011 (1110308-MS2)										
Magnesium	245	2.0	mg/l	21.0	Source: PUI0452-04 215	145	70-130			M3
Matrix Spike Dup Analyzed: 09/12/2011 (1110308-MSD1)										
Magnesium	210	2.0	mg/l	21.0	Source: PUI0452-02 183	129	70-130	5	20	
Matrix Spike Dup Analyzed: 09/12/2011 (1110308-MSD2)										
Magnesium	254	2.0	mg/l	21.0	Source: PUI0452-04 215	190	70-130	4	20	M3

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11I0300 Extracted: 09/10/11</u>										
Blank Analyzed: 09/10/2011 (11I0300-BLK1)										
Total Dissolved Solids	ND	20	mg/l							
LCS Analyzed: 09/10/2011 (11I0300-BS1)										
Total Dissolved Solids	964	20	mg/l	1000		96	80-115			
LCS Dup Analyzed: 09/10/2011 (11I0300-BSD1)										
Total Dissolved Solids	962	20	mg/l	1000		96	80-115	0.2	10	
Duplicate Analyzed: 09/10/2011 (11I0300-DUP1)										
Total Dissolved Solids	394	20	mg/l		Source: PUI0348-01 392			0.5	10	
Duplicate Analyzed: 09/10/2011 (11I0300-DUP2)										
Total Dissolved Solids	756	20	mg/l		Source: PUI0348-11 758			0.3	10	
<u>Batch: 11I0379 Extracted: 09/12/11</u>										
Blank Analyzed: 09/12/2011 (11I0379-BLK1)										
Fluoride	ND	0.40	mg/l							
Sulfate	ND	2.00	mg/l							
LCS Analyzed: 09/12/2011 (11I0379-BS1)										
Fluoride	4.05	0.40	mg/l	4.00		101	90-110			
Sulfate	20.5	2.00	mg/l	20.0		103	90-110			
LCS Dup Analyzed: 09/12/2011 (11I0379-BSD1)										
Fluoride	4.04	0.40	mg/l	4.00		101	90-110	0.2	20	
Sulfate	20.4	2.00	mg/l	20.0		102	90-110	0.6	15	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 11I0379 Extracted: 09/12/11</u>										
Matrix Spike Analyzed: 09/12/2011 (11I0379-MS1)					Source: PUI0573-05					
Fluoride	10.8	0.40	mg/l	4.00	6.68	102	80-120			
Sulfate	51.7	2.00	mg/l	20.0	30.3	107	80-120			
Matrix Spike Dup Analyzed: 09/12/2011 (11I0379-MSD1)					Source: PUI0573-05					
Fluoride	10.8	0.40	mg/l	4.00	6.68	103	80-120	0.5	20	
Sulfate	51.9	2.00	mg/l	20.0	30.3	108	80-120	0.4	15	
<u>Batch: 11I0380 Extracted: 09/12/11</u>										
Blank Analyzed: 09/13/2011 (11I0380-BLK1)										
Fluoride	ND	0.40	mg/l							
Sulfate	ND	2.00	mg/l							
LCS Analyzed: 09/13/2011 (11I0380-BS1)										
Fluoride	4.07	0.40	mg/l	4.00		102	90-110			
Sulfate	20.5	2.00	mg/l	20.0		103	90-110			N/a
LCS Dup Analyzed: 09/13/2011 (11I0380-BSD1)										
Fluoride	4.07	0.40	mg/l	4.00		102	90-110	0.02	20	
Sulfate	20.5	2.00	mg/l	20.0		103	90-110	0.2	15	N/a
Matrix Spike Analyzed: 09/13/2011 (11I0380-MS1)					Source: PUI0642-01					
Fluoride	7.34	0.40	mg/l	4.00	3.02	108	80-120			
Matrix Spike Dup Analyzed: 09/13/2011 (11I0380-MSD1)					Source: PUI0642-01					
Fluoride	7.30	0.40	mg/l	4.00	3.02	107	80-120	0.5	20	

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DATA QUALIFIERS AND DEFINITIONS

M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
N1	See case narrative.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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Certification Summary

TestAmerica Phoenix

Method	Matrix	Nelac	Arizona
EPA 200.7	Water		X
EPA 300.0	Water		X
SM 2540C	Water		X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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CHAIN OF CUSTODY FORM

- ☒ Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303
- ☐ Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803
- ☐ Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

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Analysis Required

140753

602.567.4000

Fax Number: 807-1567-4801

# of	Sampling	Sampling
60	176	11001

Billing to
Cable Resources

W
1
70